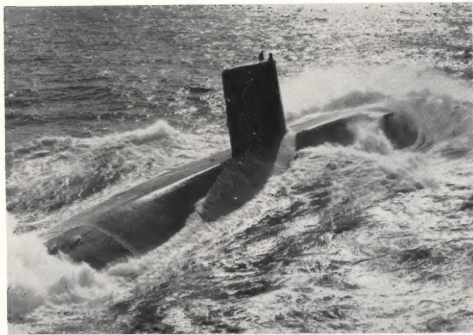




FLEET SUBMARINES

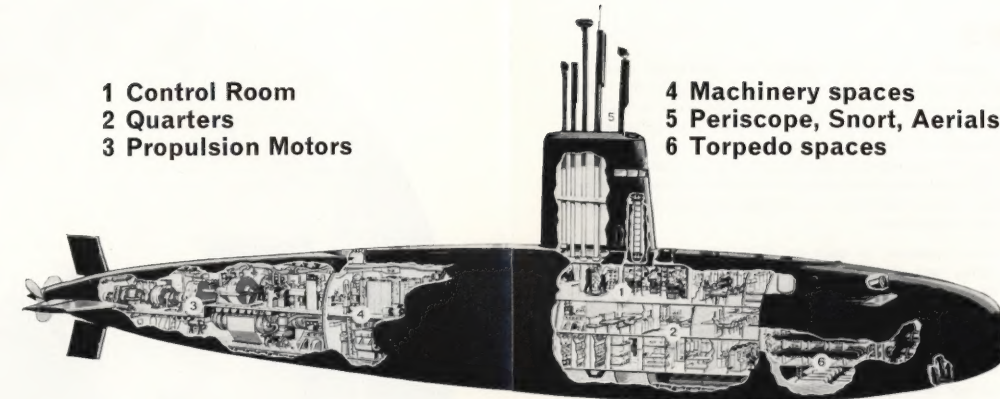


The nuclear submarine : light, shade and silhouette

Fleet Submarines

Fleet submarines, nuclear-powered but conventionally armed giants of the ocean underworld, are the capital ships of the future. Fast, silent, agile, they are free to roam the seas to protect our warships and merchant fleets in times of war and seek out and destroy enemy submarines. They can disappear beneath the waves and reappear in any part of the world. They can land assault or reconnaissance parties or remain silent and deep outside an enemy base, homing torpedoes ready for the kill.

The Royal Navy's first Fleet submarine, HMS *Dreadnought*, became operational in 1963. Built in Britain but powered by an American nuclear plant, she was the prototype for the all-British-built *Valiant* class: HM Submarines *Valiant*, *Warspite*, *Churchill*, *Conqueror* and *Courageous*. The first of a modified class was laid down in



July 1969, a second was ordered the previous May and the third was ordered in May 1970.

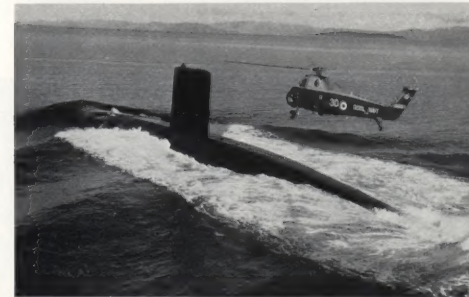
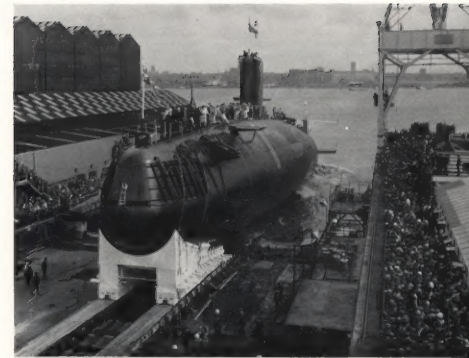
Fleet submarines, which are 285 feet long, have a beam of 33 feet and a surface displacement of 3,500 tons, are *true* submarines, because, powered by pressurised water reactors, they can remain submerged for almost unlimited periods. The prefabricated hulls are designed for high underwater speed.

The control room is like that of an aircraft or space ship, and at high underwater speeds the submarines handle like aircraft, having powered control columns which work the rudders and hydroplanes. They can dive and bank and are quite capable of aquabatics. They can be set on course and depth by automatic pilot and can communicate with air bases while submerged.

Fleet submarines are worlds of their own, free even from the air. Special air-conditioning plant enables them to stay below the surface for well over two months. Electrolytic gills extract life-giving oxygen from the sea.

Because they must remain submerged for such long periods the submarines require a highly accurate navigational system. This is provided by a complex known as SINS — Ship's Inertial Navigational System. This collates all data in relation to the movement of the submarine to present a continuous report of its position.

Fleet submarines should not be confused with their larger sisters, Polaris submarines, which, with their deadly missiles, form Britain's contribution to the strategic deterrent of the Western alliance.



Moment of launch for the fifth Fleet submarine, HMS Conqueror, at Birkenhead (top). HMS Warspite exercises with a Wessex helicopter.

Life beneath the Waves

Space in any submarine is inevitably restricted but the living conditions in Fleet submarines are unusually comfortable, having been designed with as much care as the submarines. There are three deck levels. On the top deck, next to the control room, is the wardroom and officers' quarters. The deck below houses separate messes for senior and junior ratings. Hammocks are a thing of the past — each man has a comfortable bunk.

A water distilling plant provides unlimited fresh water for daily showers and serves the automatic laundry — unheard of luxuries for the submariner of yesterday.

Great attention is paid to food; a choice of three or four dishes is offered at each meal. The well-trained cooks work in galleys which would be the envy of any housewife, employing every conceivable aid from refrigerators to infra-red grills, automatic potato scrapers to dishwashers.

When on prolonged submerged patrol the ship's company work a 'one in three' routine. This means each man's day is divided into

four hours on duty at his specialist job, with eight hours off. Everyone gives a hand in maintaining and cleaning the ship, which is usually done in the morning. In the afternoons instructional classes are held, and the period between tea and supper is devoted to recreation or individual study. Film shows are held in the evening and pop music is relayed over the broadcasting system. Other off-watch diversions include indoor games, painting and model making. Exercise machines are provided for those who want to keep their weight down.

Each ship's company is made up of 11 officers (including four engineering and electrical specialists and one medical officer) and 88 ratings (including 48 engineering and electrical ratings) 28 seamen and communication ratings and 12 stores and medical technicians, cooks and stewards. The high standard of technical knowledge required in nuclear powered submarines means an exceptional high grade of technical education for all submariners. After service in the Navy, many successfully transfer their advanced qualifications into industry and scientific research.



Left to right : In the Control Room; the Cox's at control position; working in the torpedo space; the navigator checks his charts.